REMARKS/ARGUMENTS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 1-7 and 9-15 are presently active in this case, claims 1 and 9 amended by way of the present amendment.

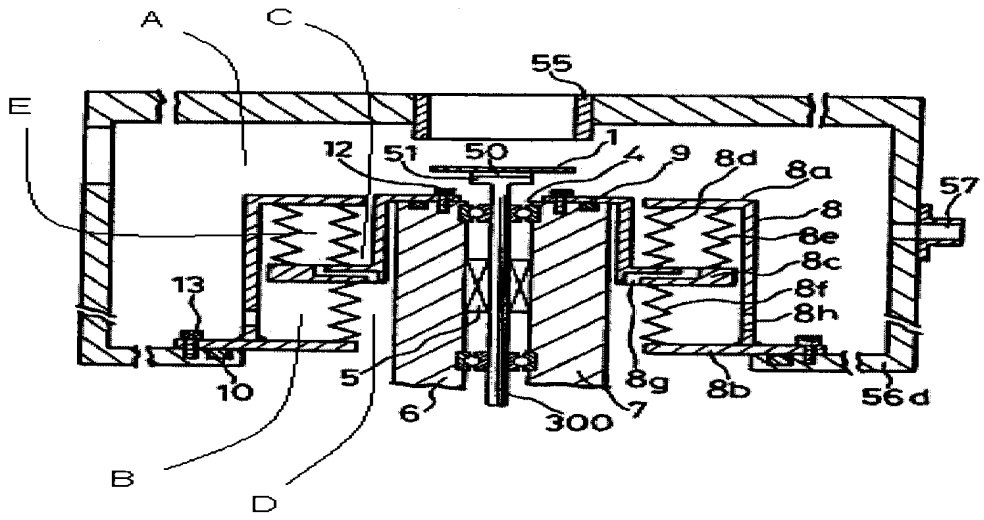
In the outstanding Office Action, claim 9 was rejected under 35 USC §102(b) as being anticipated by US patent No. 5,266,119 to Taneguchi et al.; claims 1-7 and 9-15 were rejected under 35 USC §103(a) as being unpatentable over US patent publication 2004/0035364 to Tomoyoshi et al. in view of Taneguchi et al.; claims 1-2 and 9-10 were rejected under 35 USC §103(a) as being unpatentable over US patent no. 5,980,687 to Koshimizu in view of Taneguchi et al.; claims 3-7 and 11-15 were rejected under 35 USC §103(a) as being unpatentable over Koshimizu in view of Taneguchi et al and further in view of US patent no. 5,647,912 to Kaminshizono et al. or US 7,147,749 to Nishimoto et al.

Turning now to the merits, in order to expedite issuance of a patent in this case, claims 1 and 9 have been amended to clarify the patentable distinctions of the present invention over the cited references. Specifically, claims 1 and 9 have been amended to recite that ***the entire electrode supporting member and the entire structure supporting member are installed in the vacuum atmosphere inside the vacuum chamber, respectively.*** These amendments are supported by page 14, lines 2 to 7, and therefore, no new matter has been added. Further, according to claim 1 or 9 of the present application, the driving mechanism moves the second electrode (or the second structure) through the ring member, and ***the electrode supporting member (or the structure supporting member) (1) supports the second electrode (or the second structure) and (2) connects the ring member, which is driven by***

the driving mechanism, to the second electrode (or the second structure) in order to move it within the vacuum atmosphere inside the vacuum chamber.

Fig. 2 of Taniguchi et al. (provided below) shows a space A that is inside of the vacuum chamber, which can be maintained in the vacuum atmosphere. However, a space D is outside of the vacuum chamber, and the pressure of space D may be that of an atmospheric atmosphere. Since spaces B and C are connected to the space A through the exhaust port 8h and a gap between the upper flange 8a and the hollow flange 8c, respectively, the spaces A, B and C are also inside of the vacuum chamber. However, a space E is connected to the space D of the atmospheric atmosphere through the air inlet 8g, and therefore the spaces D and E are outside of the vacuum chamber. The stage 50 is supported by the carrier shaft 7 and the rotating shaft 300 supports and is moved vertically or rotated by the driving part (not shown) through the carrier shaft 7 and the rotating shaft 300. The hollow flange 8c only connects the carrier shaft 7 and bellows 8e and 8f and separates the vacuum atmosphere from the atmospheric atmosphere.

FIG. 2



Thus, it is believed that only carrier shaft 7, technically except for the hollow flange 8c, corresponds to the "electrode supporting member" of the claimed invention. As shown in Fig. 2 of Taniguchi et al., the carrier shaft 7 is placed only in the space D, (i.e. outside of the vacuum chamber as noted above).

Accordingly, Taniguchi et al. fails to disclose that the entire electrode supporting member is placed in the vacuum atmosphere inside of the vacuum chamber, that is, in the inside of the vacuum chamber, as recited by Claims 1 an 9. In this regard, the "Response to Arguments" portion of the outstanding Office Action takes the position that the carrier shaft 7 of Taniguchi et al. (referred as the electrode support member of the present invention), is "largely contained within the vacuum chamber defined by the chamber walls." However, the "inside" and "outside" of a vacuum chamber is determined not by a shape of the vacuum chamber, but by whether or not a space concerning the vacuum chamber is maintained in a vacuum atmosphere. This has now been clarified by the amendments to claims 1 and 9.

Further, since the hollow flange 8c of Taniguchi et al. is placed between the vacuum and the atmospheric atmosphere, (that is, the space C and D, or E and B), the hollow flange 8c is not placed in the inside of the vacuum chamber but between the inside and the outside of the vacuum chamber. Still further, even an upper part of the hollow flange 8c which is connected to the carrier shaft 7 by the bolt 51 is placed between the space A of the vacuum atmosphere and the space D of the atmospheric atmosphere. Consequently, Taniguchi et al. is also silent on and fails to suggest that the entire electrode supporting member installed in the inside of the vacuum chamber.

In Fig. 6 of Tomoyoshi et al., the bottom surface 1A and the chamber 1 supports the upper electrode 3 and connects the drive mechanism 6B to the upper electrode 3 in order to move it up and down, and thus these items correspond to the electrode supporting member of

the present invention. As shown in Fig. 6 of Tomoyoshi et al., the bottom surface 1A and the chamber 1 are placed between the vacuum and the atmospheric atmosphere, that is, the inside and the outside of the vacuum chamber, rather than in the inside of the vacuum chamber.

Fig. 1 of Koshimizu discloses the first 110 and second susceptor 116, each of which supports and vertically moves the wafer W. Thus, the susceptors 110 and 116 may correspond to the electrode supporting member of the present invention, but are placed between the vacuum and the atmospheric atmosphere, that is, the inside and the outside of the vacuum chamber, rather in the inside, considering that the bellows 114 and 122 separate the vacuum area from the atmospheric area.

Kaminshizono, et al. cited in the Office Action does not disclose any structure for moving a substrate or an electrode in specification or drawings. Therefore, it is believed that this reference also does not disclosed that the electrode supporting member supports the second electrode and connects the ring member to the second electrode in order to move it vertically and the entire electrode supporting member is installed in the vacuum atmosphere inside the vacuum chamber.

Referring to Fig. 1 of Nishimoto, et al., the bellows shield 54 separates the inside from the outside of the vacuum chamber and the substrate holder 30 supports the substrate 35, and moves it up and down by the vertical transitional device 50. That is, the substrate holder 30 may correspond to the electrode supporting member of the present invention. As can be seen in Fig. 1, the substrate holder 30 is placed between the inside and the outside of the vacuum chamber, and therefore, the above feature of the present invention is not disclosed by Nishimoto, et al..

Therefore, each of the cited references or any combination thereof does not disclose or suggest the features of claims 1 and 9 that the entire electrode (or structure) supporting

member is installed in the vacuum atmosphere in the vacuum chamber. Accordingly, independent clams 1 and 9, and the dependent claims directly or indirectly depending thereon, are allowable in view of the cited references and requests that the rejections thereof be withdrawn.

Further, the Office Action rejected claims 7 and 15 in view of Taniguchi, et al., Tomoyoshi, et al., Koshimizu, Kaminishizoho, et al. and Nishimoto, et al.. The present invention of claims 7 and 15 varies the distance between the first and the second electrode while constantly maintaining the volume of the vacuum chamber maintained in vacuum.

As for Taniguchi, et al., as the hollow flange 8c moves up and down in order to vary the distance, the volume inside the vacuum chamber, that is, the spaces A, B and C, varies. As seen in the above drawing, this is because the sum of the sectional areas of the spaces B and C of the vacuum atmosphere is different from that of the space E of the atmospheric atmosphere.

Referring to Fig. 6 of Tomoyoshi, et al., the volume of the vacuum chamber, which is maintained in vacuum, is defined by the bottom surface 1A, chamber 1, upper electrode 3, bellows 7 and lower electrode 2. It can be understood that as the distance between the upper 3 and the lower electrode 2 becomes short, the volume becomes small.

Fig. 1 of Koshimizu describes the vacuum area in the vacuum chamber defined by the process container 104, bellows 114 and 122 and first and second susceptor 114 and 116. Since volumes of the spaces defined by the bellows 114, first susceptor 112 and movable shaft 114 and by the bellows 122, second susceptor 116 and movable shaft 120 become small as the distance between the wafers W becomes long, the volume of the vacuum area becomes larger.

In Fig. 1 of Nishimoto, et al. the volume in the vacuum chamber, which is maintained in vacuum, is determined by the upper electrode 22, plasma processing chamber 10, bellows shield 54 and substrate holder 30. As the substrate holder 30 moves vertically to thereby vary the distance between the substrate holder 30 and the upper electrode 22, the volume varies. For example, as the distances becomes short, the volume decreases.

As mentioned above, Kaminishizono, et al. does not change the distance between the electrodes.

Thus, Claims 7 and 15 provide an additional basis for patentability over the cited references.

Consequently, in view of the present amendment, no further issues are believed to be outstanding in the present application and the present application is believed to be in condition for allowance. Therefore, an early and favorable action is respectfully requested.

Respectfully submitted,

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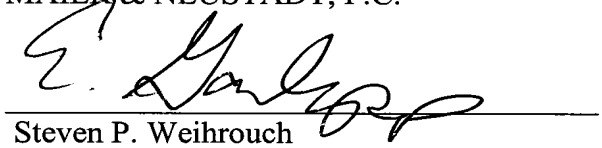

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